

**ECOLOGY & ENVIRONMENT, INC.**  
**LABORATORY DATA PACKAGE DELIVERABLE REQUIREMENTS**

\*\*\* **Note:** E & E, Inc. requires the following information in order to perform data validation. The data validation is based on limits and guidelines specified in the U.S. EPA 1990 OSWER Directive 9360.4-01.

**METALS**  
**QA LEVEL II**

1. **Case Narrative:** -Observations and/or Problems.  
-Methods used.
2. **Sample Holding Times:** -Analysis dates.
3. **Analytical Results for:**
  - **Samples.**
  - **Standards:** -Number of standards.  
-Concentration of standards.
  - **Initial Calibration:** % Recoveries (%R) of true value.
  - **Continuing Calibrations:** % Recoveries (%R) of true value.
  - **Calibration Blanks.**
  - **Method Blank(s):** -Detection limit.  
-Amount detected in blank.
  - **Matrix Spike/Matrix Spike Duplicate, if applicable:** -% Recoveries (%R)  
-% Difference (%D)
  - **Laboratory Control Samples.**
  - **ICP Interference Check Samples, if applicable.**
  - **ICP Serial Dilutions, if applicable.**
  - **Standard Additions, if applicable.**
4. **Copies of Raw Data for all Analytical Results:** Peak areas for all items in No.3.
5. **Compound Quantitation Calculations:** -Dilutions.  
-Concentrations.  
-Dry weights.  
-Etc.
6. **Chain-of-Custody:** Photocopy of COC form.

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**ORGANICS BY GC/MS**  
**QA LEVEL II**

1. **Case Narrative:** -Observations and/or Problems.  
-Methods used.
2. **Sample Holding Times:** -Extraction dates.  
-Analysis dates.
3. **Analytical Results for:**
  - **Samples:** -Relative retention times.  
-Mass spectra.  
-Ion chromatograms.
  - **GC/MS Tuning:** BFB/DFTPP ion abundances.
  - **Initial Calibration:** -Retention times (RT).  
-Response factors (RF and RRF).  
-% relative standard deviation (%RSD).
  - **Continuing Calibrations:** % difference from initial standard.
  - **Internal Standards:** -Retention times.  
-Peak areas.
  - **Method Blank(s):** -Detection limits.  
-Amount detected in blank.
  - **Surrogate Recoveries:** % recoveries.
  - **Tentatively Identified Compounds, if applicable:** Ion relative intensities.
4. **Copies of Raw Data for all Analytical Results:**
  - Sample spectra.
  - Enhanced or background subtracted spectra.
  - Standard spectra. (For tentative identified compounds, provide a reference mass spectrum from the spectral library.)
5. **Compound Quantitation Calculations:** -Dilutions.  
-Concentrations.  
-Dry weights.  
-Etc.
6. **Chain-of-Custody:** Photocopy of COC form.

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**PCBs BY GC**  
**QA LEVEL II**

1. **Case Narrative:** -Observations and/or Problems.  
-Methods used.
2. **Sample Holding Times:** -Extraction dates.  
-Analysis dates.
3. **Analytical Results for:**
  - **Samples:** Retention time windows.
  - **Initial Calibration:** -3-point calibration for each Aroclor of interest.  
-Response factors (RF).  
-% relative standard deviations (%RSD).
  - **Continuing Calibrations:** % difference from initial standard.
  - **Method Blank(s):** -Detection limits.  
-Amount detected in blank.
  - **Matrix Spike/Matrix Spike Duplicate, if applicable:** % recovery.
  - **Surrogate Recoveries:** -% recovery  
-Control limits  
-List compound(s) used as surrogate.
4. **Copies of Raw Data for all Analytical Results:**
  - Sample chromatograms.
  - Enhanced or background subtracted chromatograms.
  - Standard chromatograms.
5. **Compound Quantitation Calculations:** -Dilutions.  
-Concentrations.  
-Dry weights.  
-Etc.
6. **Chain-of-Custody:** Photocopy of COC form.

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**PESTICIDES BY GC**  
**QA LEVEL II**

1. **Case Narrative:** -Observations and/or Problems.  
-Methods used.
2. **Sample Holding Times:** -Extraction dates.  
-Analysis dates.
3. **Analytical Results for:**
  - **Samples:** Verification of positive hits by GC/MS or dissimilar column.
  - **Initial Calibration:** -Pesticide standard retention time windows and standard RTs.  
-Response factors (RF).  
-% relative standard deviation (%RSD) of response factors for aldrin, endrin, DBC, DDT, DCB.  
-% breakdown for endrin and 4,4-DDT in Evaluation Standard Mix B.  
-Surrogate compound retention times.
  - **Continuing Calibrations:** -Retention times (RT).  
-Response factors (RF).  
-% relative standard deviation (%RSD) of response factors for aldrin, endrin, DBC, DDT, DCB.  
-Analytical sequence.
  - **Method Blank(s):** -Detection limit.  
-Amount detected in blank.  
-Calibration blank.
  - **Surrogate Recoveries:** -% recovery.  
-Control limits.  
-List compound(s) used as surrogate.
4. **Copies of Raw Data for all Analytical Results:**
  - Sample chromatograms and ion spectra for GC.
  - Enhanced or background subtracted chromatograms and ion spectra for GC.
  - Standard chromatograms and ion spectra for GC.
5. **Compound Quantitation Calculations:** -Dilutions.  
-Concentrations.  
-Dry weights.  
-Etc.
6. **Chain-of-Custody:** Photocopy of COC form.

## MISCELLANEOUS ANALYSES

- 1/93

**ECOLOGY & ENVIRONMENT, INC.**

**ADDITIONAL TERMS AND CONDITIONS  
APPLICABLE TO  
SUBCONTRACTOR ANALYTICAL SERVICES  
UNDER GOVERNMENT CONTRACTS**

**A. DISPOSAL** - Unless otherwise directed by E & E, the seller shall be responsible for disposition or ultimate disposal of any remaining sample materials in compliance with all applicable Federal, State, and Local laws and regulations. Also, upon E & E's request, the seller shall promptly provide at its' own expense all pertinent information and records to document that such disposition or ultimate disposal has been performed in compliance with governing regulations.

**B. NOTIFICATION** - The seller shall notify E & E immediately of any circumstances encountered which may impair the satisfactory performance of services in accordance with project specifications (including but not limited to holding time requirements, satisfactory QC spike recoveries and analysis of specified QA samples). Failure to notify E & E in a timely manner and to implement corrective actions as mutually agreed to shall warrant contract termination.

**C. DELINQUENCY** - It is understood that upon failure by the seller to perform any element of this Order, as outlined in the scope of work, design, specifications, methods of analysis, documentation, and timely delivery of articles or services hereunder, E & E shall make an equitable adjustment to the amount due according to the following schedule:

1. Failure to meet non-standard delivery date shall result in forfeiture of all surcharge or premium price differentials;
2. Failure to meet standard delivery date shall result in a penalty, applied to the total order cost, of 2% for each 24-hour period up to 10 calendar days, and 5% for each 24-hour period thereafter, up to a maximum of 75% total cost reduction. Further failure to meet the requirements of this Order shall constitute Breach of Contract.